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Cooperative Extension

*South Dakota State University*

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# Sudangrass for Supplemental Forage



*Cooperative Extension Service*

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# Sudangrass for Supplemental Forage

**S**UDANGRASS is one of South Dakota's best supplemental forage crops. It makes high quality hay and good summer pasture. Its place as a summer pasture cannot be overlooked; it grows during the season when other sources of pasturage are short or lacking. Livestock producers who have used Sudan find that it is a good security crop for their forage needs.

Sudan is drought resistant. It can withstand prolonged dry periods and make rapid regrowth when moisture becomes available. It is an ideal emergency crop when other crops have failed due to drought, flooding, frost, or insects. Sudan for forage production is adapted to all areas of the state. You should plan an acreage of Sudangrass every year.

## SUDAN FOR PASTURE

Sudangrass is particularly well adapted as a temporary or supplemental summer pasture crop. Under normal conditions, it will produce an abundance of palatable, nutritious pasturage. Delay pasturing until the stand is at least 18 to 24 inches high. This will give the plants time to develop an extensive root system which favors rapid regrowth and also greatly reduces the hazard of prussic acid poisoning. Do not turn cattle into Sudan pasture when they are hungry; let them get a fill of some other forage first. Do not pasture new regrowth after the first fall frost because of possible prussic acid poisoning. Piper Sudan practically eliminates the problem of prussic acid.

Divide Sudangrass pasture into small fields so that they will be grazed down quickly. Under such a practice of rotational grazing, the carrying capacity for a short period is 4 or more animal units per acre. This practice will keep the growth young, succulent, and highly nutritious throughout the grazing season.

## SUDAN FOR HAY

The preferred stage of maturity for cutting Sudan for hay is from the time it begins heading until it is fully headed. It can easily be handled with ordinary haying machinery or harvested with a grain binder and allowed to cure in shocks. The stems should be dry before you put it in the barn or stack. Sudan hay, when properly handled, is practically equal to that of other nonlegume roughages. The feed value of Sudan hay is improved by supplementing with legume hay or silage.

Soybean and Sudangrass mixture improves the nutritional value of the hay and usually increases forage yield over Sudan alone. Sudan is low in protein. Soybean hay is relatively high in protein and thus a

well balanced feed mixture is made available. This practice is recommended in the areas where soybeans are adapted. The soybean and Sudangrass seed can be mixed and seeded in one operation. If the two are mixed together for planting, mix the seed often in the drill box. Some authorities suggest that the soybeans be planted first and when the bean plants are about 2 inches tall, seed in the sudan. Seed the sudangrass parallel to the soybean drilled rows. There will be very little injury to the soybean seedlings. The general rate of seeding is 1 bushel of soybeans and about 10 pounds of Sudangrass per acre.

## SUDAN FOR SILAGE

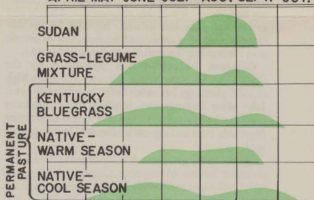
Sudangrass makes good silage and is comparable to sorghum or corn silage in chemical composition. Forage sorghums, sorghum-sudangrass hybrids, true sudangrass hybrids, or corn will usually produce a greater tonnage of silage per acre. A mixture of sudangrass and soybeans can be grown for silage. This makes a palatable silage of high feeding value. Results indicate that slightly immature sudan-soybean silage is superior to more mature material. Sudan for silage is usually seeded in rows. Properly cured hay or ensilage usually eliminates the prussic acid problem.

## VARIETY RECOMMENDATIONS

Piper Sudangrass should be the first choice of varieties when Sudan is to be used for pasture. It was selected for low prussic acid content and tends to remain as such under varied growing conditions. No

## PASTURE CALENDAR

APRIL MAY JUNE JULY AUG. SEPT. OCT.



livestock losses from prussic acid poisoning have been reported with the use of pure Piper.

All Sudangrasses are closely related to sorghums and cross fertilize with them. Thus, hybrids can be produced that are high enough in prussic acid content that care must be taken in pasturing the crop. Piper seed sealed with the blue certification tag insures pure seed.

Variety	Recommendations	Safety
Piper	Highly recommended	Excellent
Greenleaf	Acceptable	Fair to good
Common	Acceptable	Fair
Sweet Sudan	Not recommended for pasture	Poor

The South Dakota Experiment Station is not in position to recommend any of the commercial Sudangrass hybrids for pasture use. However, any hybrid that is known to be low in prussic acid would be suitable.

#### VARIETY DESCRIPTIONS

**Piper Sudangrass** is a low prussic acid Sudan developed and released by the Wisconsin Agricultural Experiment Station. Minnesota pasture trials indicate that Piper sudangrass was superior to all other varieties tested in yield and rate of regrowth after grazing. In addition it had the lowest prussic acid content which tended to remain relatively low under varied growing conditions. The variety is variable in seed color, foliage color, and some growth characters. It is a vigorous strain which tillers freely. It produces a high yield of palatable forage and is a good seed producer. The seeds are larger in size than those of common sudangrass varieties. It shows a high resistance to leaf blight and anthracnose.

**Greenleaf** was developed from the original cross (Leoti-Sudan 2) x (Leoti-Sudan 4) made in Texas but the final selection was made at Kansas State College in 1950. Greenleaf is a vigorous, leafy, late maturing Sudangrass. It is highly resistant to leaf blight and anthracnose and also to some bacterial foliage diseases. Greenleaf is considered medium low in prussic acid content but is not as low as Piper Sudangrass.

**Common Sudangrass** was introduced by the USDA in 1909 from Africa. It grows 3 to 5 feet high in solid plantings but much taller in cultivated rows. Like other Sudangrasses, it tillers freely, produces good yield of palatable forage, and makes satisfactory regrowth. Pure sudangrass is relatively low in prussic acid.

**Sweet Sudangrass** was developed at the Texas Experiment Station by crossing Common Sudangrass with Leoti sorgo and repeatedly backcrossing to sudan. It has a sweet juicy stalk and is resistant to foliage diseases. It is more vigorous and has yielded more forage

than regular sudangrass. The variety is very palatable to livestock.

Tests have been made in South Dakota on the prussic acid content of Sweet Sudan showing that, under certain conditions, it consistently runs higher in prussic acid than does Piper Sudangrass. Other states also report that it does not have the safety features of Piper Sudan when used for pasture.

**Sudangrass Hybrids.** Several commercial sorghum-sudangrass and true sudangrass hybrids are available. These hybrids have high forage yield potential. Experiment Station pasture trials show that, for those hybrids tested, the prussic acid content is higher than for Piper sudangrass. Farmer experiences have shown that these hybrids are relatively safe to pasture providing proper management practices are followed and precautionary measures taken as cited in "Sudan for Pasture."

The South Dakota Experiment Station is not in a position to recommend any certain commercial hybrid for pasture use. However, any hybrid that is known to have a low prussic content would be suitable.

#### SEEDBED PREPARATION

A firm, well prepared seedbed is essential. Plow the land and make several harrowings before planting. Harrowing firms the seedbed, fills in air pockets, conserves moisture, and controls many annual weeds.

#### RATE OF SEEDING

Plant about 15 to 25 pounds per acre when seeded solid. The lower rate is for the drier areas and the higher rate is for the higher rainfall areas. A grain drill set to sow 2 pecks of wheat to the acre will ordinarily sow about 20 to 25 pounds of Sudangrass seed per acre. For seeding in cultivated rows 36 to 42 inches apart, use about 4 to 6 pounds of seed per acre. In rows 18 to 24 inches apart, plant about 6 to 8 pounds per acre.

#### TIME OF PLANTING

Sudangrass should be seeded after the soil has become warm or about 2 weeks after corn planting time. Planting in cold soil results in poor stands or slow growth and invites a weed problem. Usual planting dates are from May 25 to June 15. The latest recommended planting date is July 1.

#### METHOD OF PLANTING

Seeding with a grain drill is the usual planting method in the higher rainfall areas when Sudan is to be used for pasture or hay. This method produces better quality forage, owing to the finer stems produced in thick stands. Sudan grown in cultivated rows often gets coarse resulting in less desirable hay and often is more difficult to properly cure. Plant seeds

1 to 2 inches deep.

In lower rainfall areas when Sundangrass is to be used for hay, better results are often obtained by seeding it in rows. If the top soil is too dry for germinating the seed, the use of a furrow opener makes possible the planting of the seed in moist soil, thus insuring immediate germination and uniform stands.

#### **SUDAN'S EFFECT ON THE SOIL**

Crops following Sudan sometimes show signs of a definite shortage of nitrogen. This is probably due to bacteria in decaying the Sudan roots, temporarily tying up the available nitrogen in the soil. This is especially true when the crop is grown on soils of low fertility. Usually this condition can be corrected by applying 30 to 40 pounds of nitrogen per acre for the crops that follow.